

**Anemia is more than just a vitality thief. Running low on red blood cells can put a strain on your organs. Here's what you can do to cut your risk.**

By Terri D'Arrigo

# DPRAL

## (Anemia and Diabetes)

**Y**our blood does a lot for you. White blood cells help you fight off infection, platelets promote clotting when you're injured, and red blood cells carry oxygen through your body and help take away waste.

It's possible to run low on any one of these blood components, but the most common deficiency involves a low red blood cell count, which is called anemia. According to the Centers for Disease Control and Prevention, about 3.4 million Americans have been diagnosed with anemia, but the National Anemia Action Council points out that millions more may be living with the condition and not know it.

Anemia can make you tired, weak, and headachy, and it can make it difficult for you to concentrate. Severe anemia can cause shortness of breath and a rapid heartbeat.

But anemia does more than sap your

energy: Because there aren't enough red blood cells to provide your tissues with the oxygen they need, untreated anemia can put a strain on your organs and muscles, including your heart.

### Causes

Anemia can arise from a number of conditions. The most common culprit is iron deficiency. Iron deficiency anemia can occur when you lose a lot of blood (through bleeding disorders or menstruation), you don't get enough iron in your diet, your body doesn't absorb iron properly, or your body has an increased demand for iron because of pregnancy or a growth spurt. (See "Who Is At Risk?" on page 50 to see if you are in a high-risk group.) Deficiencies in vitamin B12 and folic acid, both essential to red blood cell formation,

NEED

EMPTY

FULL

“Raisins, peas, **dark green leafy vegetables**, and dried beans are all good sources of iron.”

—Joan Hill, CDE, RD, LD



may also contribute to the development of anemia.

Kidney disease can cause anemia, as well. Your kidneys make a hormone called erythropoietin that stimulates the production of red blood cells in your bone marrow. When the kidneys are damaged, they don't make enough erythropoietin, so your bone marrow doesn't produce enough red blood cells to meet your body's needs. People with diabetes are at increased risk for developing anemia because of the risk of diabetes-related kidney disease.

Autoimmune diseases such as celiac sprue (gluten intolerance), in which the lining of the intestines is damaged from eating gluten and proteins found in many grains, can cause and worsen anemia. (There are several genetic conditions that cause or contribute to anemia, such as sickle cell disease, but a thorough discussion of them is beyond the scope of this article.)

Your doctor can determine if you have anemia through a blood test.

## WHO IS AT Risk?

Several groups of people have an increased risk of anemia:

- Babies who don't get enough iron
- Children in a growth spurt
- Women of child-bearing age who menstruate
- Pregnant women
- People with kidney disease
- Seniors

## Prevention

There's not much you can do about your genetics or age, but you can take steps to cut your risk of anemia.

### Control your blood glucose.

If you have diabetes, manage your blood glucose, says Allen R. Nissenson, MD, FACP, professor of medicine, associate dean, and director of the dialysis program at the David Geffen School of Medicine at the University of California, Los Angeles. “Studies have shown that those who have very good blood glucose control have a lower risk of developing kidney disease,” he says. Cutting your risk of kidney disease cuts your risk of anemia.

### Control your blood pressure.

High blood pressure contributes to kidney disease, Nissenson adds. “If you have early signs of kidney disease like microalbuminuria [small amounts of protein in the urine], talk to your doctor about taking an ACE inhibitor,” he says. “Combining good blood glucose control and good blood pressure control makes it much less likely that your kidney disease will progress, or, if it does, it will progress more slowly.”

**Get enough iron.** Meat is an excellent source of iron, but you'll need to balance your intake to protect your cardiovascular system from the ravages of high cholesterol, says Joan Hill, CDE, RD, LD, diabetes educator, dietitian, and president of Hill Nutrition Consulting, LLC, in Natick, Mass. “White meat and fish are lower in fat, but are not as good a source of iron as dark meat, beef, or lamb,” she says. “If you eat red meat, choose the leanest cuts possible.”

Meat is not the only way to get iron, however. “Raisins, peas, dark green leafy vegetables, and dried beans are all good sources,” she says. Fortified cereals are another option.

Nissenson adds that, contrary to popular belief, vegetarians and vegans do not have a higher risk of anemia or iron deficiency.

**Consider vitamin C.** “Vitamin C helps you absorb iron, but it's better to get it through the foods you eat than through supplements,” says Hill. She suggests eating citrus fruits just before or after consuming your sources of iron.

**Time your calcium.** Calcium

*continued on page 52*

continued from page 50

can interfere with iron absorption, Hill notes, so if you take calcium supplements, take them a few hours before or after you take in your main source of iron.

**Avoid caffeine.** Caffeine inhibits iron absorption, so cut back on caffeinated drinks such as colas, teas, and coffee.

**Check your meds.** Certain medications can raise the risk of anemia, says Hill. In fact, two classes of diabetes drugs, thiazolidinediones (TZDs or “glitazones”) and biguanides (metformin), have been shown to slightly increase the risk of anemia.

Metformin can cause a deficiency of B12. Although it is not clear exactly how TZDs can cause anemia, adding metformin to a TZD increases the occurrence of anemia. It may help to discuss your medications with your doctor or pharmacist if you are in a high-risk group.

## Treatment

If you suspect you may have anemia, talk to your doctor. If your anemia is caused by another condition, treating that condition

## Anemia And Your Monitor

According to the U.S. Food and Drug Administration (FDA), the amount of red cells in your blood, known as hematocrit, will affect the readings you get on your blood glucose monitors. If you have a low hematocrit because of your anemia, your blood glucose may test higher than someone whose hematocrit is normal. The FDA recommends that you check with your doctor or diabetes educator if you have an abnormal hematocrit.

may improve or even resolve the anemia.

Iron supplements are a cornerstone of treatment for iron deficiency anemia. They’re available over the counter or by prescription, and your doctor will know which one is best for you. But do not start taking over-the-counter iron supplements without getting tested by your doctor first. Your body cannot remove extra iron, and excess iron can affect your digestive tract, liver, and other organs.

Iron supplements can be effective, but if your anemia stems from moderate or severe kidney disease, they are not a cure. “Iron supplementation may hold off development of significant anemia, but it won’t stave it off forever,” says Nissenson. As the kidney

disease progresses, so will the anemia.

If iron supplements don’t do the trick or if you have progressive kidney disease, you may need shots of artificial erythropoietin. Your doctor can give you the shots or you can take them yourself.

If you have kidney disease, once you start taking erythropoietin, you’ll most likely need to take it for the rest of your life unless you get a kidney transplant, says Nissenson.

Blood transfusions are a last resort. They are used only for extremely severe and life-threatening anemia.

Finally, make sure your doctor periodically monitors your blood, and stay on top of your treatment even if your anemia is mild, says Nissenson. “A common myth is that mild anemia doesn’t have any important health consequences other than making you tired,” he says. “But we know that even mild anemia has a profound effect on a whole variety of organs.”

It’s best to safeguard your health and preserve your quality of life by working with your doctor and getting the treatment you need. ▲

*Terri D’Arrigo is an associate editor of Diabetes Forecast.*

## On The Web

- The National Anemia Action Council

[www.anemia.org](http://www.anemia.org)

- The National Institute of Diabetes and Digestive and Kidney Diseases

[www.niddk.nih.gov](http://www.niddk.nih.gov)

- For information **specifically about anemia, kidney disease, and dialysis**, see:

[kidney.niddk.nih.gov/  
kudiseases/pubs/anemia/index.htm](http://kidney.niddk.nih.gov/kudiseases/pubs/anemia/index.htm)